

COUNTY OF MILWAUKEE
Inter-Office Communication

Date: July 15, 2005

To: Supervisor Richard D. Nyklewicz, Jr., Chairman, Committee on Finance and Audit
Supervisor Roger Quindel, Chairman, Committee on Personnel

From: Jerome J. Heer, Director of Audits
Steve Cady, Fiscal & Budget Analyst, County Board Staff
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Subject: Review of Key Actuarial Assumptions used for the 2006 Recommended Pension Contribution for the Milwaukee County Employees' Retirement System (File No. 05-312)

At its meeting on June 16, 2005, the Committee on Finance and Audit directed the Department of Audit and County Board Staff to review key actuarial assumptions used by the Milwaukee County Employees' Retirement System (ERS) Board of Directors (Pension Board) in recommending to the Milwaukee County Board of Supervisors a 2006 pension contribution of \$45,933,000. On June 17, 2005, the Committee on Personnel concurred with that directive. The \$45.9 million figure recommended by the Pension Board is approximately \$7.5 million more than it would otherwise be due to changes, approved by the Pension Board, to two actuarial assumptions used in calculating the pension contribution amount.

Background

As outlined in Chapter 201 of the General Ordinances of Milwaukee County, the County's pension contribution consists of two elements: the estimated 'normal cost' plus an amortized payment for any unfunded obligation. The normal cost reflects the cost of additional benefits earned by employees in the current year. The unfunded obligation is the difference between the actuarial value of the pension fund's assets and its actuarial accrued liability. This unfunded liability is amortized over a period of time established by the Pension Board, subject to review and modification by the County Board of Supervisors. The amortization period currently stands at 30 years (the County Board established a 30-year amortization period in the 2004 Adopted Budget).

The calculation of actuarial value and liability is influenced by several key assumptions, each of which requires approval by the Pension Board. One of the most influential of those assumptions--in terms of impact on the contribution calculation--is the assumed rate of return on assets. Other important assumptions utilized in the calculation of the pension contribution include mortality rates, salary growth rates, turnover rates and retirement rates. Each of these assumptions is reviewed annually by the Pension Board actuary (Mercer Human Resource Consulting) for consistency with current conditions. In addition, by ordinance requirement, an analysis is conducted at least once every five years comparing

current assumptions with actual experience.

Finally, it is important to recognize that while the County budgets its pension contribution for a given year as part of the budget that is adopted in November of the preceding year, County Ordinances require a calculation of the actual contribution for that year to be forwarded by the actuary each summer. The ordinances stipulate that any difference between the budgeted and actual contribution requirements is to be amortized over a five-year period.

Changes in Process

According to research conducted by the Corporation Counsel's Office in a memo dated September 15, 2003, the manner in which the County Board establishes its annual pension contribution to fund the ERS was changed significantly in 1989. Prior to 1989, the Department of Administration.(predecessor of the Department of Administrative Services) retained an actuary and determined the recommended amount to be budgeted for the pension contribution. A substantial decrease in the amount of the contribution included in the County Executive's Recommended 1989 Budget in comparison to previous years initiated considerable discussion regarding the appropriate placement of responsibility for determining the annual pension contribution amount.

In a memo from a former Director of Audits dated October 14, 1988, it was suggested that the pension Board, as trustee of the ERS, was a logical entity to approve underlying actuarial assumptions and determine the appropriate level of the annual pension contribution. On May 19, 1989, the County Board approved an ordinance revision that placed responsibility for determining the appropriate annual pension contribution with the Pension Board. The Pension Board was to provide the assumptions that underlie the request, and recommend a figure to the County Board and the County Executive for inclusion in the County Executive's Recommended Budget. The County Board retained the authority to determine the appropriate amortization period for any unfunded liability, and it also retained the authority to determine how to deal with the difference between the budgeted annual pension contribution and the actual amount required, based on actuarial review, the following year. Under current ordinance, any overpayment or shortfall in the annual budgeted pension contribution is amortized over the next five years.

Thus, the County Board has created a separation between calculation of an appropriate recommended annual pension contribution amount, but retained the authority and flexibility to modify the actual amount appropriated.

A separate section of the ordinances provides a mechanism to help ensure that actuarial assumptions used to establish the recommended pension calculation amount are reviewed and evaluated on a regular basis. Section 201.24(8.15) requires that at least once in each five-year period, "...the [ERS] actuary

shall make an actuarial investigation into the mortality, service and compensation experience of the members and beneficiaries of the retirement system, and shall make a valuation of the assets and liabilities of the funds of the system, and taking into account the results of such investigation and valuation, the [pension] board shall adopt for the retirement system such mortality, service and other tables as shall be deemed necessary.”

Recent Experience Report

A retrospective review of actual experience vs. actuarial assumptions (experience report) was most recently performed by the actuary retained by the ERS in April 2003. Based on that report, the following changes were recommended by the actuary and adopted by the Pension Board for 2004:

- Salaries: lower assumptions of annual growth in selected age groups for general population, lower all Deputy Sheriffs rates by 1.5%.
- Withdrawal rates: make adjustments to expected rates of withdrawal from ERS system at various age groups (some higher, some lower).
- Retirement rates: make adjustments for various age groups (some higher, some lower).
- Mortality rates: update mortality tables published by the Society of Actuaries replaced older tables.
- Asset smoothing technique: recognize both realized and unrealized asset gains and losses over a five-year period. Previously, realized gains and losses were recognized immediately, while unrealized gains and losses were amortized over five years.
- Assumed rate of return: Reduce from 9.0% to 8.5%
- Assumptions regarding back DROP (Deferred Retirement Option Program) utilization and disability rates were not adjusted.

The fiscal impact of the changes in assumptions included \$8.2 million added to the 2004 recommended pension contribution due to the change in the assumed rate of return from 9.0% to 8.5%; \$1 million was added to the 2004 figure for all other adjustments.

Historical Trends and Pension Board Policy Guidelines

Table 1 presents the rate of return on assets achieved by the ERS annually since 1945.

Table 1
Milwaukee County Employees' Retirement System
Annual Rates of Return
1945-2004

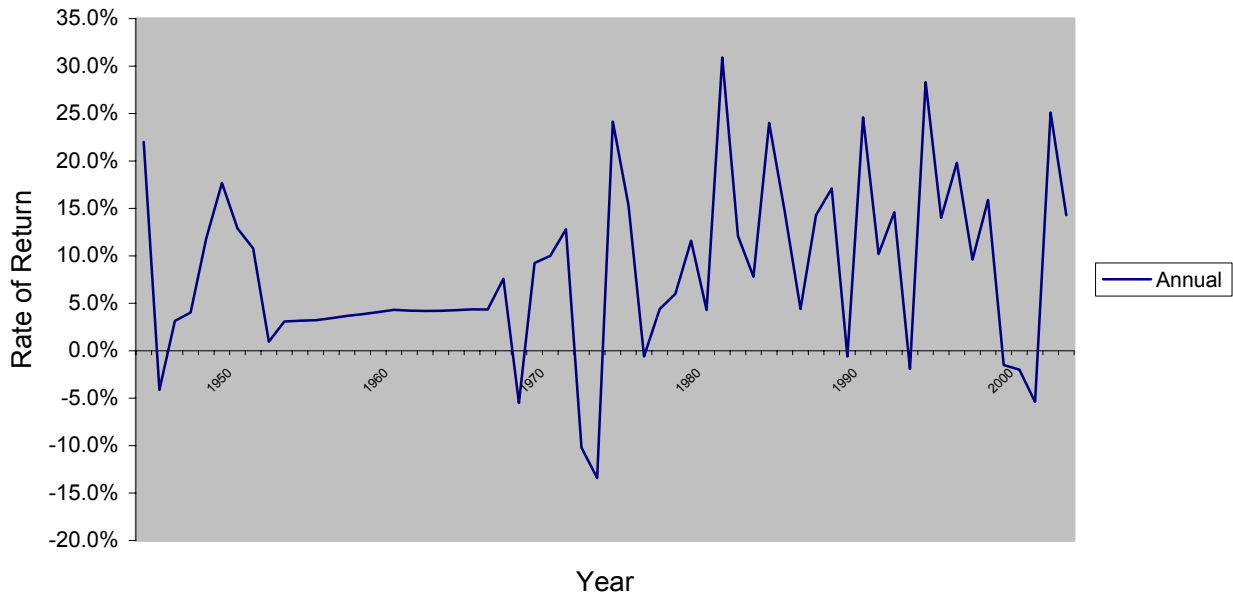
<u>Year</u>	<u>Rate of Return</u>	<u>Year</u>	<u>Rate of Return</u>	<u>Year</u>	<u>Rate of Return</u>
1945	22.0%	1965	4.3%	1985	24.0%
1946	-4.1%	1966	4.4%	1986	14.6%
1947	3.2%	1967	4.3%	1987	4.4%
1948	4.0%	1968	7.6%	1988	14.3%
1949	11.9%	1969	-5.5%	1989	17.1%
1950	17.7%	1970	9.3%	1990	-0.6%
1951	12.9%	1971	10.0%	1991	24.6%
1952	10.8%	1972	12.8%	1992	10.2%
1953	1.0%	1973	-10.2%	1993	14.6%
1954	3.1%	1974	-13.4%	1994	-1.9%
1955	3.2%	1975	24.1%	1995	28.3%
1956	3.2%	1976	15.3%	1996	14.0%
1957	3.4%	1977	-0.6%	1997	19.8%
1958	3.7%	1978	4.4%	1998	9.6%
1959	3.9%	1979	6.0%	1999	15.9%
1960	4.1%	1980	11.6%	2000	-1.5%
1961	4.3%	1981	4.3%	2001	-2.0%
1962	4.2%	1982	30.9%	2002	-5.4%
1963	4.2%	1983	12.1%	2003	25.1%
1964	4.2%	1984	7.8%	2004	14.3%

Source: ERS records.

Over the 60-year period from 1945 through 2004, the ERS has averaged an annual rate of return on assets of 8.3%. During that period, the ERS' highest annual rate of return was 30.9% (1982) and its lowest rate of annual return was -13.4% (1974). Throughout the period, the annual rates of return exhibited substantial fluctuation in the short term, as depicted in **Figure 1**.

Figure 1

ERS Investment Rates of Return

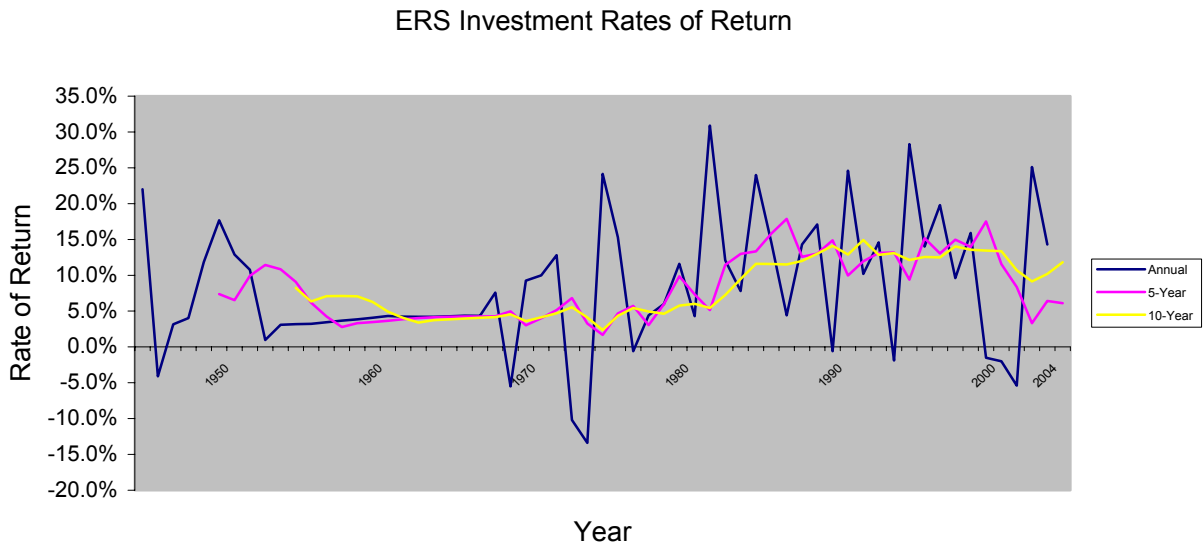


Source: ERS records.

An appreciation of the long-term nature of a pension liability is critical to understanding the importance of establishing an actuarially assumed rate of return that is prudent given the short-term fluctuations shown in the actual performance of the ERS pension fund. Actuaries determine the liability, or total present and future benefits of current retirees and vested employees, through a complex calculation of individual projections based on the variables identified in the previously-described experience report, such as estimated salaries, level of benefits, likelihood of retirement age, mortality rates and other variables, along with an assumed rate of growth in pension fund assets over time. As illustrated in the \$8.2 million impact of the ½% change in the actuarially assumed rate of return for the ERS in 2004, a small change in the assumed long-term rate of return on assets can have significant implications on the estimated annual contribution necessary to maintain a healthy pension fund. Establishing a prudent actuarially assumed rate of return requires a long-term view to help ensure the long-term health of the pension fund, but a long-term view is also important to prevent wild fluctuations in the annual contribution. Smoothing techniques are used to buffer the fund against these same annual fluctuations. For instance, asset gains and losses are recognized over five years, rather than annually, to smooth the impact of market fluctuations.

Figures 2 and 3 illustrate the impact of using smoothing techniques, with different time horizons, to reflect long-term trends in ERS annual returns. **Figure 2** plots the ERS annual rate of return against its 'rolling' five-year average annual rate of return, as well as its 'rolling' ten-year average annual rate of return.

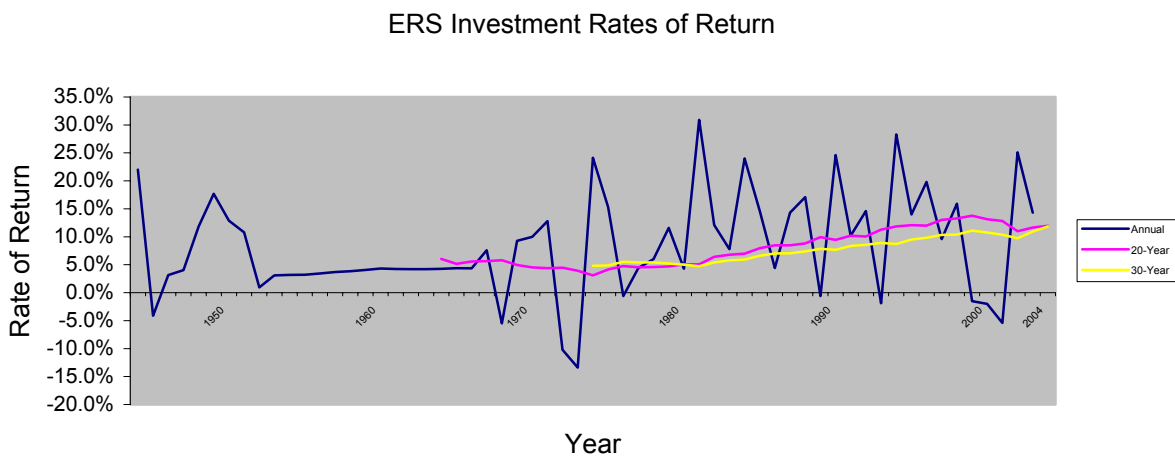
Figure 2



Source: ERS records.

Figure 3 uses the same data, but plots the ERS annual rate of return against its 'rolling' 20-year average annual rate of return, as well as its 'rolling' 30-year average annual rate of return.

Figure 3



Source: ERS records.

As these figures demonstrate, the longer the time horizon used to evaluate the ERS performance, the less fluctuation occurs in the average annual rate of return.

At its meeting on September 18, 2001, the Pension Board adopted a policy of using a 10-year rolling average rate of return to establish the assumed rate of return, but within the parameters of never less than 7.5% and never more than 9.0%. At the same time, the Pension Board changed the amortization period for any under-funding or over-funding of the actuarially determined pension liability, from 34 to 20 years. At the time of this decision, the ERS was over-funded, with a funded ratio of 111.4%. The combination of these two changes reduced the recommended pension contribution for 2002 from \$10.9 million to zero.

It should be noted that, while using a long-term view for establishing an actuarially assumed rate of interest reduces fluctuations in estimated annual pension contributions, it will cause greater fluctuations in the funded ratio of the actuarially determined pension liability, a key statistic in evaluating the overall health of the pension fund. **Table 2** shows the funded ratio of the ERS from 1991 through 2004.

Table 2 Milwaukee County Employees' Retirement System Annual Funded Ratio 1987-2005			
<u>End of</u> <u>Year</u>	<u>Funded</u> <u>Ratio</u>	<u>End of</u> <u>Year</u>	<u>Funded</u> <u>Ratio</u>
1991	91.6%	1998	129.0%
1992	91.4%	1999	121.4%
1993	90.1%	2000	111.4%
1994	88.5%	2001	108.6%
1995	89.9%	2002	93.8%
1996	106.9%*	2003	84.7%
1997	118.9%	2004	79.9%**
* Reflects a change in Actuarial Asset Valuation, to recognize realized gains and losses immediately. ** Reflects a change back to the previous Actuarial Asset Valuation method, to recognize both realized and unrealized gains and losses over five years.			
Source: ERS Audited Financial Statements, 1996-2004.			

During the 14-year period shown in **Table 2**, the funded ratio for the ERS ranged from a high of 129% (1998) to a low of 79.9% (2004). The funding ratio hovered around the 90% level during the five-year period 1991 through 1995, but benefited from a change in the actuarial valuation of assets, recognizing realized stock market gains and losses immediately (as opposed to spreading them out over five years,

which remained the policy for unrealized market gains and losses. As previously noted, the Pension Board changed back to the previous policy (recognizing all gains and losses, realized and unrealized, over five years) in 2004.

In *An Audit of Milwaukee County's Development and Adoption of 2001—2004 Wage and Benefit Package*, issued in April 2002, the Department of Audit identified certain correspondence indicating the possibility of an inappropriate use of the ERS actuary. One request in particular suggested the possibility of 'shopping' for an assumed actuarial rate of return on investments to manipulate the 'cost,' in terms of the recommended annual pension contribution, of the proposed benefit. An audit recommendation was made to require that any queries by the County of the ERS actuary concerning the estimated costs of proposed pension benefit changes be based on the existing actuarial assumed rate of return for the pension fund. Further, the recommendation was made that if a best and worst case scenario is desired, the range should be requested of the actuary based on the actuary's best judgment, and not articulated by the County.

2006 Recommended Pension Contribution

The 2006 recommended pension contribution figure of \$45,933,000 was approved by the Pension Board at a special meeting on June 10, 2005, and included the impact of making changes to two key actuarial assumptions contained in the prior year's recommended pension contribution. At its May meeting on May 18, 2005, the Pension Board was presented a preliminary pension contribution, calculated with no changes in key actuarial assumptions, of \$38,482,000. According to the firm retained by the Pension Board to provide actuarial services for the ERS, this process of providing a preliminary calculation based on no changes in actuarial assumptions, is standard practice. A revised calculation(s) is then prepared based on subsequent direction from the Pension Board, according to the actuarial firm and a review of Pension Board meeting minutes.

Changes in Actuarial Assumptions

The Pension Board approved changes to two key actuarial assumptions at its June 10 meeting: the assumed rate of return and the percentage of employees selecting the back DROP payout option upon retirement. A review of meeting minutes, tape recordings of proceedings and materials provided to board members by the actuary at both the May 18 and June 10 Pension Board meetings reflects a good deal of discussion and exchange of information regarding these changes. For instance, the board policy of using the ERS rolling ten-year average annual rate of return, within the parameters of 7.5% to 9.0%, was discussed. At the May 18 meeting, the actuary presented information indicating the previous 10-year average rate of return was 10.9%, but the actuary suggested that the resulting figure of 9.0% called for by the board policy was too aggressive. *[Note: the 10-year average figure cited by the actuary differs*

from the figures included in our tables because of minor timing differences and because the actuary's rate is net of administrative expenses.] The actuary did not, however, recommend reducing the assumed rate from the 2005 level of 8.5%. Rather, he suggested it would not be prudent to increase the rate to 9.0%.

At the June 10 meeting, in response to a request from the Pension Board for additional information regarding the impact on the recommended pension contribution calculations using alternative assumptions, the actuary presented additional information concerning the assumed rate of return on assets. Specifically, the actuary noted:

- Capital Market Expectations
 - Expected Annual ERS Portfolio Returns. The actuary presented information indicating the ERS would rank in the 50th percentile with a compound annual return in 2006 of 6.99%; it would rank in the 25th percentile with a return of 5.29% or less; it would rank in the 75th percentile with a return of 8.7% or more. This means that if the ERS obtained a rate of return in 2006 of 8.7% or more, it would outperform 75% of its peers. Conversely, if it obtained a rate of return of 5.29% or less, it would be outperformed by 75% of its peers.
 - The above projections were based on a 20-year time horizon, ERS' target asset allocation, historical ERS administrative expense assumptions and projections of average returns for various asset classes by the actuary firm's investment consulting division.
- Historical Performance and Current Economic Conditions
 - The actuary noted the ERS 10-year average annual return of 10.9%.
 - Inflation was noted as low, placing added pressure on real rates of return.
 - The actuary cited two sources of comparison for assumed rates of return:
 - A Public Pension Coordinating Council survey published in 2002 showed an average rate of 7.91% for the 263 public plans included in the survey.
 - The Public Fund Survey, published by the National Association of State Retirement Administrator in September 2004, showed a median of 8.0% for the 125 public plans included in the survey, meaning ½ of survey respondents were below 8.0%, while the other half was above 8.0%.

With respect to the back DROP benefit option, information was presented to the Pension Board at its May 18, 2005 meeting regarding the brief history of actual back DROP experience vs. the current actuarial assumptions. Under the back DROP option available to retirees, a person declares a prior date as the effective DROP date. The monthly retirement benefit amount the person would have been eligible for on that date is calculated, and a lump sum payout consisting of the monthly payment, plus interest, from the declared back DROP date to the actual retirement date, is provided. The monthly benefit, which represents a reduction from the amount to which the person would be entitled if calculated for the actual retirement date, continues to be paid thereafter. The actuary noted that current assumptions were that

50% of eligible retirees would utilize the back DROP option, with an average back DROP period of 4 years. However, the actuary report to the Pension Board that actual experience from 2002 through 2004 showed that about 70% of eligible retirees selected the option, with an average back DROP period of five years. The actuary also noted that there were a high number of retirements in 2004 (701), and further noted that 2004 (April) represented the final year that employees hired prior to 1982 could increase their pensions incrementally, up to a maximum of 25%, by remaining in service beyond January 2001.

At its June 10, 2005 meeting, the Pension Board received additional cost information from the actuary that showed the impact of various changes to the back DROP assumptions. At that meeting, it was decided that the assumption regarding utilization would be increased from 50% to 70% to better reflect actual experience, but that the assumed period of the average back DROP would remain at four years. Although experience indicated a five-year average period of back DROP, discussion indicated that the large number retirees hired prior to 1982 tended to skew that data to a longer period, because the general decline in wages going back in time was offset by the 25% 'bonus,' which will not be as prevalent a characteristic for future retirees.

Conclusions Regarding Pension Board Decision-Making Process

Our review indicates that the Pension Board, on a unanimous vote of the five members present, used its best judgment in recommending to the County Board an ERS pension contribution of \$45.9 million for 2006. The record shows a deliberate approach by the Pension Board, with sufficient information and alternatives requested of, and supplied by, the actuarial firm retained by the board to provide such information. It is also important to note the inexact nature of the underlying actuarial assumptions that ultimately determine the resulting calculation of a projected pension contribution amount.

It should also be noted that, despite the characterization of the minutes of the Pension Board's June 10, 2005 meeting, according to the actuarial firm, it **did not** recommend lowering the assumed actuarial rate of return. In an interview, the actuary stated to us that it was his specific intent to make no recommendation regarding the assumed rate, but rather, to provide the Pension Board with the information to make an informed judgment. The actuary did, however, agree that his comfort level was higher at the lower assumed rate.

Comparison of ERS Past Performance with Other Municipal Funds

We utilized a networking function of the National Association of Local Government Auditors to identify several stand-alone municipal pension plans for purposes of comparing past investment return performance, as well as recent actuarial assumed rate of return information. **Table 3** summarizes the results of our survey.

Table 3 Survey of Stand-Alone Municipal Pension Plans Summary Data					
<u>Plan</u>	<u>Size</u> <u>(Billion)</u>	<u>Percent</u> <u>Funded</u>	<u>Actuarial</u> <u>Assumed</u> <u>Rate of Return</u>		<u>10-Yr Average</u> <u>Rate of Return</u>
			<u>2004</u>	<u>2005</u>	
City of Milwaukee	\$4.4	116.0%	8.5%	8.5%	12.4%*
Milwaukee County	1.7	79.9	8.5	8.5	11.8
Austin, TX	1.4	80.8	7.75	7.75	11.4*
Ft. Worth, TX	1.5	87.0	8.5	8.5	11.1*
San Bernadino County CA	4.2	93.6	8.0	8.0	10.9*
San Jose CA (Police/Fire)	1.9	100.2	8.0	8.0	10.5
Denver, CO	1.7	99.0	8.0	8.0	10.4
Kansas City, MO	0.7	84.7	7.75	7.75	10.4
San Jose, CA (Gen.)	1.4	97.6	8.25	8.25	10.3
Seattle, WA	1.7	86.0	7.75	7.75	9.4
* Adjusted to exclude estimated administrative expense for comparability. Source: Department of Audit telephone survey conducted July 5-15, 2005.					

As shown in **Table 3**, Milwaukee County, along with two other plans, has the highest actuarial assumed rates of return among the survey group. However, the survey data also shows that the Milwaukee County ERS plan's actual average annual rate of return (11.8%) is second only to the City of Milwaukee's 12.4%. Given its superior performance over the past ten years, a more aggressive assumed rate of return appears justified in comparison to the other plans.

Conclusions

Based on our review of the process by which the ERS Pension Board developed its recommended 2006 pension contribution amount of \$45.9 million, we make the following observations and conclusions:

- ***Funding of the ERS pension obligation requires a long-term view.*** Absent any compelling reasons for modification, key actuarial assumptions should be based on long-term trends in actual experience when feasible, and expectations for long-term rates of return. Resulting contributions need to be consistently supported, with heavier contributions made when called for, rather than adjusting assumptions to arrive at a desired contribution amount.

However, the judgments used in making various actuarial assumptions, as well as the self-correcting 'smoothing' characteristics of the formula used to determine pension contribution obligations, provides some amount of flexibility in the determination of an appropriate contribution amount. One of these smoothing features, dictated by ordinance, currently sets a five-year amortization period for differences between the amount appropriated in the budget and the actual amount needed based on experience. This amortization period can be modified by the County Board.

- ***The assumed rate of return has a long track record and departing from policy guidelines should be done with careful consideration.*** The ERS average annual rate of return since 1945 is 8.3%. A review of annual rates during that 60-year period shows only two instances in which negative rates of return occurred in consecutive years (1973—74 and 2000—2002). Further, the ERS experienced positive double-digit rates of return in 16 of the past 25 years, averaging 12.2% during that time period.
- ***Our survey of other stand-alone municipal pension plans shows that Milwaukee County's actual rate of return over the past 10 years justifies a relatively aggressive assumed rate of return.*** In addition, some of the survey data regarding other public plans' assumed rates of return that was presented to the Pension Board by the actuary was at least three years old. The more recent (August 2004) data, also presented by the actuary to the Pension Board, showed one half of public pension plans had an assumed rate of return higher than 8.0%, while the other half had assumed rates of return lower than 8.0%
- ***The 2006 recommended pension contribution amount of \$45.9 million is a judgment call on the part of the ERS Pension Board.*** The recommendation is not unreasonable. However, as the County Board deliberates on the Pension Board's recommendation, it may wish to bear in mind that the paramount concern of the Pension Board is the health of the fund. Logically, the lower the assumed rate of return, the 'safer' would be the financial health of the fund. In its larger scope of responsibility, the County Board must weigh the relative health of the pension fund vs. other budgetary considerations. Given that the ERS amortization (smoothing) formula is 'self-correcting,' any shortfall/overpayment is spread over the next five years (this period is established by ordinance). Taking a relatively small risk of being 'aggressive' with an assumed rate of return, if not extreme, can be justified by the pressing needs of the County's current budget situation (e.g., hedging one's bet with an assumed rate that is aggressive, but not extreme, to avoid layoffs). For instance, for 2006, a difference in the pension contribution of \$7 million could mean avoiding layoffs for approximately 110 current employees.
- ***A second actuarial opinion would do little to clarify matters.*** In our view, the difference in the current and prior assumed rates of return (8.5% and 8.0%) does not constitute a significantly large enough variance to justify seeking another actuarial opinion. As illustrated by the variance in assumed rates of return among our survey group of stand-alone municipal pension plans, there is no 'right answer' regarding the appropriate assumed rate for a pension plan. That variance (7.5% to 8.5%) suggests that the ½% differential in the current and prior ERS assumed rates is within parameters of a reasonable area of disagreement, and is too fine a point to hire an additional actuary for a second opinion.
- ***The back DROP option is a relatively new benefit for Milwaukee County retirees, with a limited amount of actual experience from which to draw.*** Continued close monitoring, with annual adjustments for developing experience, is prudent for this actuarial assumption.

This report is provided for the Committees' information.

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